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Notice of Allowability

Application No.

10/787,280

Examiner

Mariceli Santiago

Applicant(s)

TINWELL ET AL.

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed June 21, 2007.
2. ☒ The allowed claim(s) is/are 1-4,6-20 and 27-41.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Response to Amendment

The Amendment, filed on June 21, 2007, has been entered and acknowledged by the Examiner.

Cancellation of claims 5, 21-26 and 42-47 has been entered.

Claims 1-4, 6-20 and 27-41 are pending in the instant application.

Allowable Subject Matter

Claims 1-4, 6-20 and 27-41 are allowed over the prior art of record.

The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 1, and specifically comprising the limitation of a retention feature at least partially surrounded by an outwardly protruding lip and extending generally radially into the noble metal tip from the protruding lip, the retention feature being located adjacent the attachment end.

Regarding claims 2, 3, 6-8 and 11-13, claims 2, 3, 6-8 and 11-13 are allowable for the reasons given in claim 1 because of their dependency status from claim 1.

Regarding claim 4, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 4, and specifically comprising the limitation of a retention feature extending generally radially into the noble metal tip from an exposed surface of said noble metal tip, the retention feature being located adjacent the attachment end wherein the retention feature radially extends only partially through a diameter of the noble metal tip, and wherein the retention feature is of a generally conical shape.

Regarding claim 9, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 9, and specifically comprising the limitation of first and second retention features are located at said first axial position and are circumferentially spaced from one another by approximately 180°, and third and fourth retention features are located at said second axial position and are circumferentially spaced from one another by approximately 180°.

Regarding claim 10, claim 10 is allowable for the reasons given in claim 9 because of its dependency status from claim 9.

Regarding claim 14, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 14, and specifically comprising the limitation of a preformed retention feature, and a fusion layer that extends into the preformed retention feature without mechanical deformation of the center electrode component front end and locks the noble metal tip to the center electrode.

Regarding claims 15-20, 27 and 29-31, claims 15-20, 27 and 29-31 are allowable for the reasons given in claim 14 because of their dependency status from claim 14.

Regarding claim 28, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 28, and specifically comprising the limitation of a fusion layer that extends into the preformed retention feature and locks the noble metal tip to the center electrode, wherein the retention feature radially extends only partially through a diameter of the noble metal tip, and wherein the retention feature is of a generally conical shape.

Regarding claim 32, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 32, and specifically comprising the limitation of the noble metal tip further comprises a plurality of the retention features, wherein first and

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second retention features are located at a first axial position and are circumferentially spaced from one another by approximately 180°, and third and fourth retention features are located at a second axial position and are circumferentially spaced from one another by approximately 180°.

Regarding claim 33, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 33, and specifically comprising the limitation of the tip is locked to the electrode by material that: i) includes electrode material without any significant amount of noble metal material, ii) extends into the one or more recessed retention features, and iii) conforms with the shape of the one or more recessed retention features.

Regarding claims 34-38, claims 34-38 are allowable for the reasons given in claim 33 because of their dependency status from claim 33.

Regarding claim 39, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 39, and specifically comprising the limitation of the noble metal tip includes one or more preformed retention features extending inwardly into the tip from a peripheral surface of the tip at a location intermediate the attachment end and the firing end; and the tip is secured to the center electrode by a localized laser-formed fusion layer that extends into the one or more preformed retention features.

Regarding claim 41, claim 41 is allowable for the reasons given in claim 39 because of its dependency status from claim 39.

Regarding claim 40, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 40, and specifically comprising the limitation of tip is secured to the center electrode by a fusion layer that extends into the one or more preformed retention features, and wherein the fusion layer includes only material from the center electrode, whereby the tip is locked to the center electrode.

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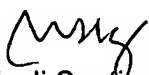
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Mariceli Santiago
Primary Examiner
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